

ABSTRACT**METHOD AND SYSTEM FOR MODULATING AND DETECTING HIGH DATARATE
SYMBOL COMMUNICATIONS**

5

A method and system for modulating and detecting high datarate symbol communications provides superior performance in channels having a fixed spectral efficiency. A quadrature amplitude modulation (QAM) constellation and an optimized mapping are employed to encode/detect a communications signal and error correction is provided using high speed forward error correction techniques. A log likelihood detection scheme and/or a novel phase detector may be employed to further enhance performance.